Development of R Shiny APPs for assessing and visualizing water quality standards attainment data

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Chesapeake Bay WQS Attainment: Assessment and Reporting

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Water Quality Standards Attainment and Monitoring

RECENT PROGRESS **MIXED** | OUTLOOK **OFF COURSE**

Continually improve our capacity to monitor and assess the effects of the management actions being taken to implement the Chesapeake Bay Total Maximum Daily Load (Bay TMDL) and improve water quality. Use monitoring results to report annual progress being made in attaining water quality standards and trends in reducing nutrients and sediment in the watershed.

https://www.chesapeakeprogress.com/clean-water/water-quality

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Chesapeake Bay WQS Attainment: Assessment and Reporting

Water Quality Standards Attainment (1985-2020)

Water quality is evaluated using three parameters: dissolved oxygen, water clarity or underwater grass abundance, and chlorophyll a (a measure of algae growth).

VIEW CHART   VIEW TABLE

https://www.chesapeakeprogress.com/clean-water/water-quality

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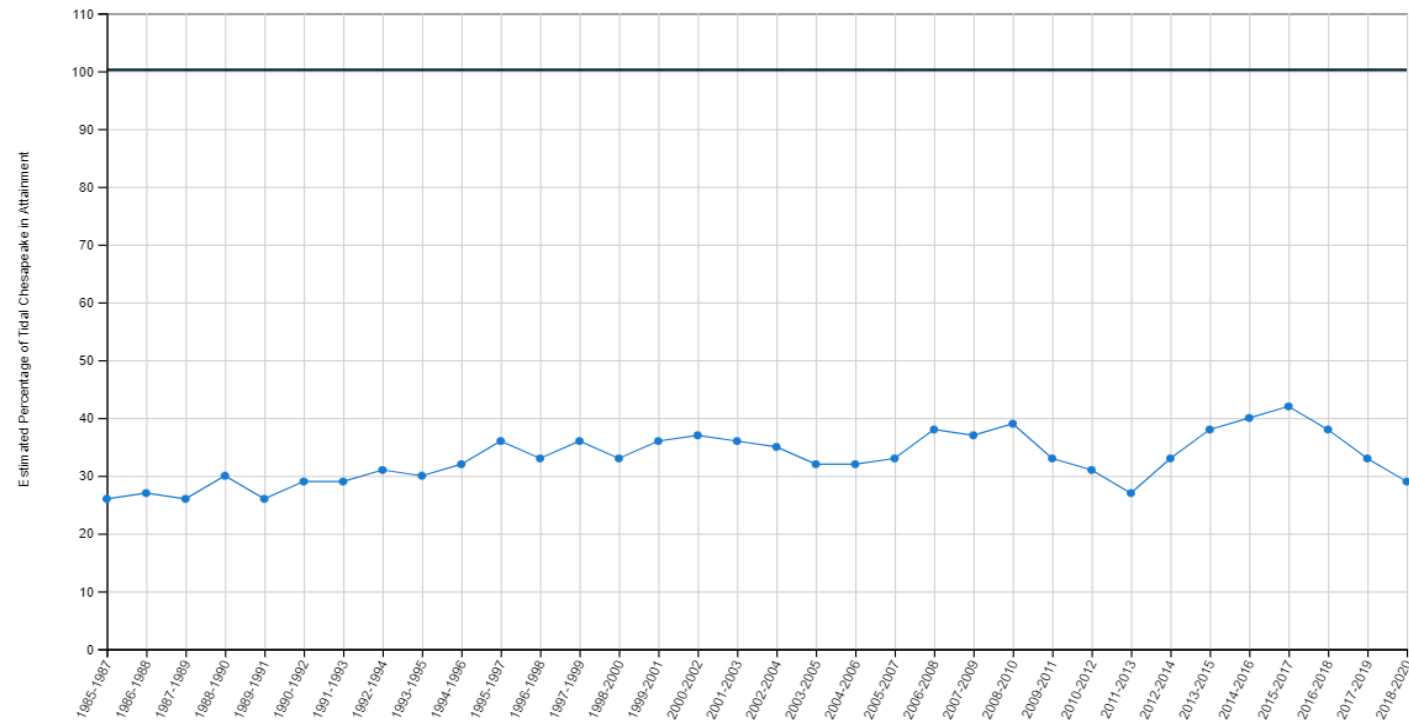
Chesapeake Bay WQS Attainment: Assessment and Reporting

The overall attainment indicator provides a useful estimate of the integrated condition of the Bay in terms of attainment of the three water-quality standards. However, reporting of the overall indicator alone does not:
- provide segment or designated use (DU) specific information,
- provide a quick comparison between different assessment periods,
- provide maps or timeseries for pre-identified segments and/or DUs,
- identify segments and/or DUs that show improving or degrading trends.

Making such detailed information accessible to the partnership (state managers, academic researchers, CBP analysts/staffs) may promote the overall effort of characterizing & explaining the Bay's progress toward WQS attainment.

R Shiny: An Interactive Tool

WQS Attainment Indicator or Attainment Deficit
different assessment periods
different designated uses
different segments
different criterion
different tidal systems
different states
long-term and short-term trends

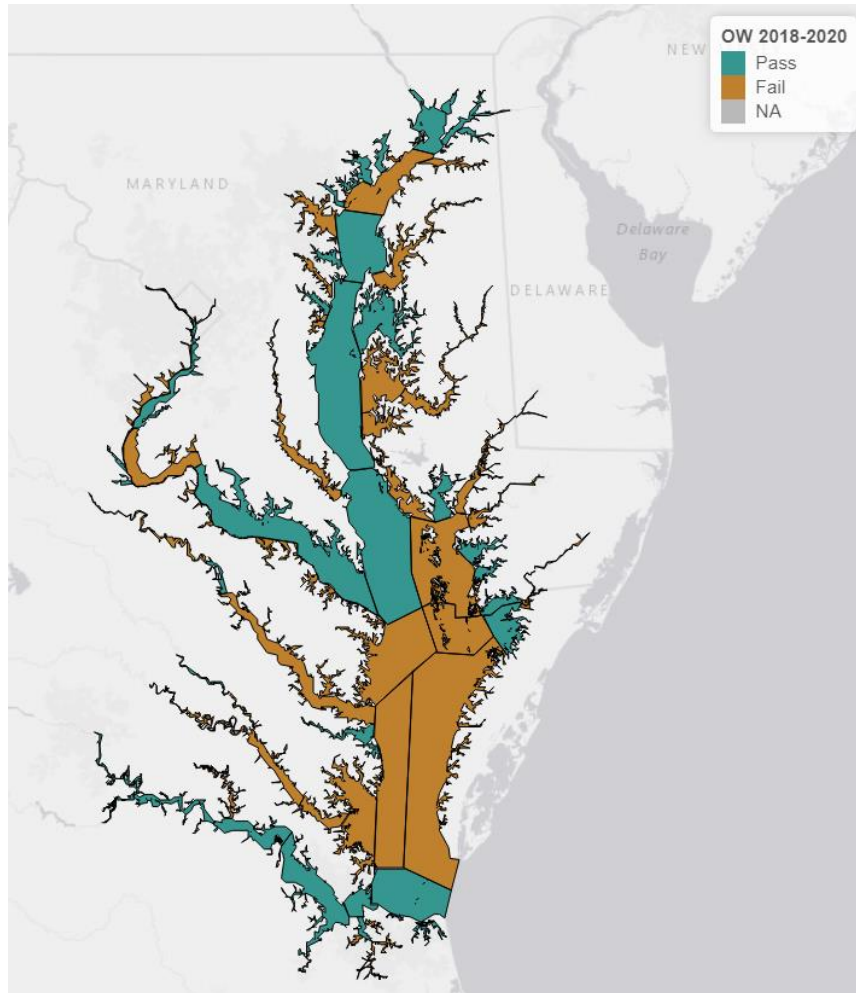| *Illustrations* |
| :---: |
| Maps |
| Timeseries Plots |
| Tables |
| Text Summaries |

Interactive, i.e., updated based on user inputs

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R Shiny: An Interactive Tool

WQS Attainment Indicator

https://zhangqian0324.shinyapps.io/WQS_Attaiment_Indicator/

WQS Attainment Deficit

https://zhangqian0324.shinyapps.io/WQS_Attaiment_Deficit/

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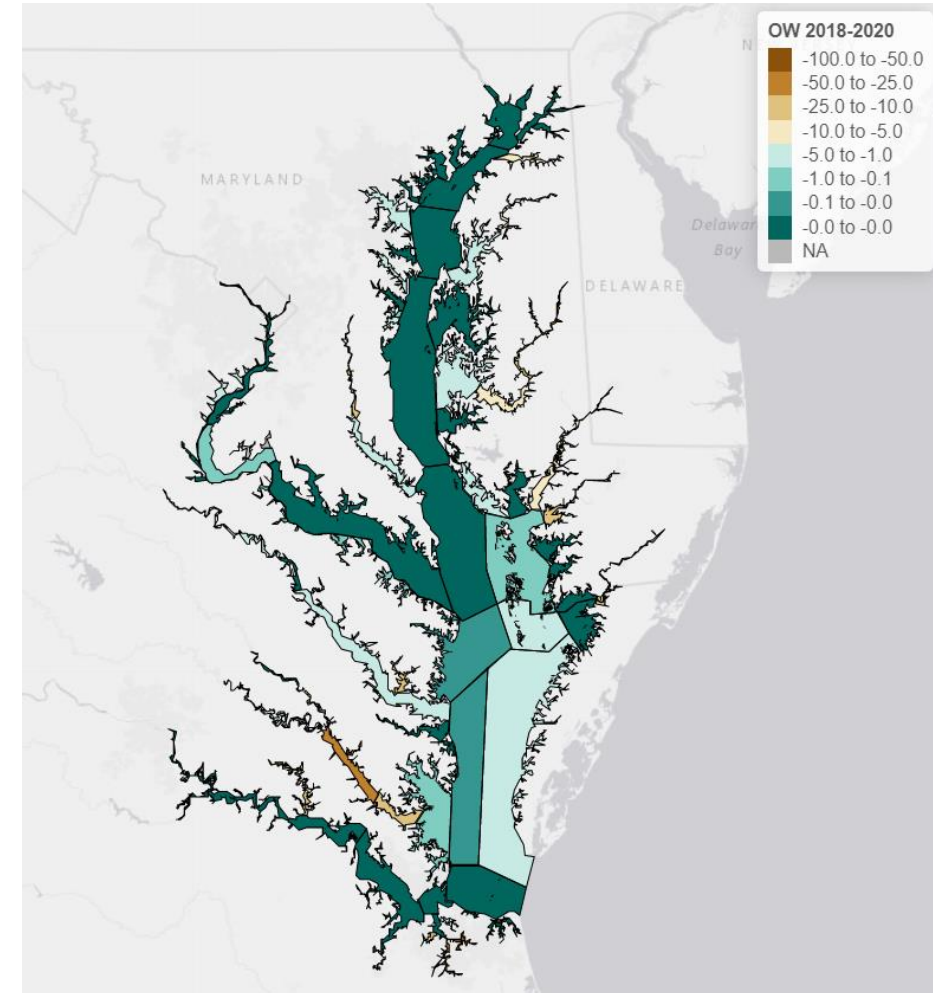
Feedback? Suggestions? Please contact

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